



Enabling System-of-Systems Design Automation™

System-of-Systems Trade-Off Analysis and Optimization Verification and Validation On-Board Diagnostics and Self-healing Security and Anti-Tampering Rapid Prototyping

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## **Company Overview**

We enable Acquisition Managers, Primes and System Integrators develop, verify and sustain complex, reliable and secure systems and networks

We have developed several innovative technologies leveraging over \$8M in SBIR investments from DARPA and six other DoD agencies. We are looking for opportunities to transition these to the Warfighter.

> EDAptive Computing has a sole-source (Phase III SBIR) Navy IDIQ contract vehicle with a \$45+ million ceiling that can be used by any agency to apply these methods to complex system upgrades and recertification.

SBA Certified 8 (a) (2005-2014), founded in 1997

Locations:

- Dayton, Ohio (Headquarters)
- Satellite Offices (Washington DC, Springfield, OH, San Diego, CA)

**Capabilities Summary** 



# **Technology Overview**

**Enabling System-of-Systems Design Automation**<sup>™</sup>

| Capability                                  | Enabling Functionality   | Applications  |
|---|--|---|
| System-of-Systems Design                    | Executable Specification with<br>System Level Design Language,<br>Graphical Tool Suite,<br>Parameterizable model library | What-if analysis of concepts,<br>requirements, designs and upgrades;<br>Analysis of cost, schedule and<br>performance risks; Interoperability<br>analysis; Automating processes and<br>procedures; Business Process<br>Optimization |
| Rapid Prototyping                           | FPGA design skills, Reusable software assets   | Rapid prototyping of digital<br>electronics; Retargeting legacy<br>systems; Rapid implementation of<br>complex software applications  |
| Verification and Validation                 | Automated test generation, Formal methods  | Acceptance tests; IV&V of new<br>systems and upgrades; Formal<br>verification; Safety and reliability<br>analysis of flight and mission critical<br>systems   |
| On-Board Diagnostics and Self-<br>Healing   | Model-based monitoring and self-<br>healing  | On-board diagnostics and self-<br>healing; Autonomic computing;<br>Network intrusion detection and<br>prevention  |
| Anti-Tampering and Trust<br>Assurance       | Tools and techniques to prevent reverse engineering, and assure trustworthiness of FPGAs                                 | Protect Intellectual Property; Protect<br>against reverse engineering; Assure<br>trustworthiness  |
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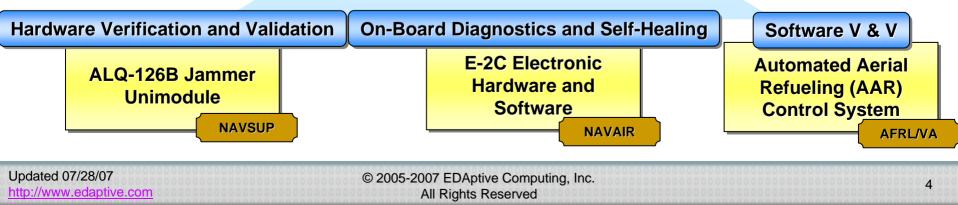
**Capabilities Summary** 



## **Applications**

#### Enabling System-of-Systems Design Automation™





**Capabilities Summary** 

## **EDAptive Products and Professional Services**

**Enabling System-of-Systems Design Automation™** 

| Product                  | Capability   | Functionality   | Tools   |
|--------------------------|--|---|---|
| <b>EDA</b> STAR™         | System-of-Systems Trade-Off<br>Analysis and<br>Optimization,Verification and<br>Validation                         | System-of-Systems executable<br>models, verification of safety<br>and correctness properties<br>using formal techniques,<br>automated test generation, trust<br>assurance tests, assertion<br>generation and insertion for<br>safety assurance, development<br>of monitoring models | Syscape™,<br>VectorGen™,<br>SpecSafe™,<br>ModSpec™                      |
| <b>EDA</b> SHIELD™       | Security and Anti-Tampering, On-<br>Board Diagnostics and Self-Healing   | Generation and insertion of of<br>Anti-Tamper logic in FPGAs,<br>Protection of software using Co-<br>Processors, monitoring models<br>for diagnostics, intrusion<br>detection and self-healing  | SystemCritics™,<br>OCT <sup>2</sup> ANE™,<br>SAMURAI™                   |
| Professional<br>Services | Model development, Product<br>customization and enhancement,<br>Solution development leveraging<br>reusable assets | Highly qualified and experienced staff and mature processes   | Sole-Source IDIQ<br>Phase III SBIR,<br>8(a), Commercial<br>Catalog, GSA |

**Capabilities Summary** 

### **Transition Milestones/Successes**

- Record of SBIR Success
  - 12 Phase II; 2 Phase III awards
  - Over \$8M invested by DARPA, USAF, USN, USA, NASA, MDA, OSD, NSF
- Key Milestones

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COMPUTING, INC

- Successfully completed (3/05) Phase III contract from Air Force
- Awarded (6/04) 5 year Phase III IDIQ contract from NAVAIR with over \$45+M ceiling
- Partnerships/Collaborations
  - Lockheed Martin Mentor under Mentor-Protégé project (12/03-12/05)
  - Transitioning our SBIR technologies to Springfield Solutions Center under SAIC sponsorship
  - Transitioning our SBIR technologies to DHS first responders for assessment of gaps & alternatives under Battelle sponsorship
  - Donated software to Wright State University for non-commercial use; Led to formation of EDAptive Computing BPM Research Center
  - Member of national NACMAST Consortium Network Attack Characterization Modeling And Simulation Test Center
  - Member of NSF I/UCRC Intelligent Maintenance Systems
  - Member of DHS Software Assurance Program Working Groups
  - Participating in IEEE DASC Working Group for Rosetta Standardization
- Market Expansion
  - Transition to DoD and NASA through collaboration with Primes
  - Transition to commercial market for Business Process Planning, Optimization